

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Original) A device for analysing manual thumps applied to simulate pre-cordial thumps for the treatment of a dysrhythmia of the heart of a patient, the device comprising a sensor arrangement arranged to detect parameters of a said manual thump.
2. (Original) A device according to claim 1, wherein the sensor arrangement comprises at least one sensor having a frequency response of at least 1 kHz.
3. (Currently Amended) A device according to claim 1-~~or 2~~, wherein the sensor arrangement comprises at least one sensor which produces an output signal representative of the force applied to the sensor.
4. (Original) A device according to claim 3, wherein the output of sensor arrangement is proportional to the mechanical input.
5. (Currently Amended) A device according to ~~any one of the preceding claims~~claim 1, wherein the sensor arrangement is arranged to detect parameters of a said manual thump having an energy in the range from 1J to 20J.
6. (Currently Amended) A device according to ~~any one of the preceding claims~~claim 1, wherein the sensor arrangement comprises at least one sensor which comprises:
a support;

a member for receiving an applied force mounted for movement relative to the support with a resilient arrangement having a preselected spring constant coupled between the member and the support; and

an optical sensor arranged to detect the displacement of the member relative to the support.

7. (Original) A device according to claim 6, wherein the optical sensor is fixed to one of the support and the member, an optical grating being fixed to the other of the support and the member positioned to be analysed by the optical sensor to detect the displacement of the member relative to the support.

8. (Currently Amended) A device according to ~~any one of the preceding claims~~claim 1, further comprising a speed detector arrangement for detecting the pre-impact speed of the fist.

9. (Original) A device according to claim 8, wherein the speed detector arrangement comprises at least two, spaced apart optical transmitter/receiver pairs for detecting passage of the fist.

10. (Currently Amended) A device according to ~~any one of the preceding claims~~claim 1, wherein the device has, in the target region for manual thumps, mechanical properties selected to simulate the precordial region of the chest of a patient.

11. (Original) A device according to claim 10, further comprising a flexible sheet covering the sensor arrangement and having a resilience selected to simulate the precordial region of the chest of a patient.

12. (Currently Amended) A device according to ~~any one of the preceding claims~~claim 1, further comprising analysis means for analysing the detected parameters according to predetermined criteria to classify the effectiveness of a manual thump.

13. (Currently Amended) A device according to ~~any one of the preceding claims~~claim 1, further comprising indicator means for outputting at least one of a visible or an audible indication of the detected parameters.

14. (Currently Amended) A device according to ~~any of the preceding claims~~claim 1, wherein the sensor arrangement comprises an array of sensors.

15. (Original) A device according to claim 14, wherein the array is a regular array.

16. (Currently Amended) A device according to claim 14 or 15, wherein each sensor is covered by a rigid cap for transmitting applied force to the respective sensor.

17. (Currently Amended) A device according to ~~any one of claims~~claim 14 to 16, further comprising an electronic circuit for receiving the output signal of each sensor.

18. (Original) A device according to claim 17, wherein the electronic circuit comprises at least one analog-to-digital converter arranged to convert the output signals of the sensors into a digital signal.

19. (Original) A device according to claim 18, wherein the electronic circuit further comprises at least one multiplexer arranged to time-division multiplex the output signals of a group of sensors before conversion by said at least one analog-to-digital converter.

20. (Original) A device according to claim 19, comprising a plural number of multiplexers and analog-to-digital converters, each arranged to convert the output of a respective multiplexer.

21. (Currently Amended) A device according to ~~any one of the preceding claims~~claim 1, wherein the device has an output port for transferring the output signals of the sensor arrangement.

22. (Currently Amended) A combination of a device according ~~any one of the preceding claims~~to claim 1 with a computer system arranged to receive the output signals of the sensor arrangement, the computer system having a computer program executable to process the output signals of the sensor arrangement.

23. (Original) A combination according to claim 22, wherein the computer program capable of deriving the work performed during the manual thump.

24. (Currently Amended) A combination according to claim 22-~~or 23~~, wherein the computer program is capable of producing a graphical representation of the output signals of the sensors.

25. (Original) A combination according to claim 24, wherein the computer program is capable of producing a graphical representation of any one or all of : the respective output signal of respective sensors over time ; the combination of the output signals of all the sensors over time; and the output signals of the sensors in their relative positions.

26. (Original) A method of analysing a manual thump applied to stimulate a pre-cordial thump for the treatment of a dysrhythmia of the heart of a patient, comprising applying the manual thump to a device according to ~~any one of claims 1 to 21 or a combination according to any one of claims 22 to 25~~ claim 1.

27. (Original) A force-detecting sensor comprising:

a support;

a member for receiving an applied force mounted for movement relative to the support with a resilient arrangement having a preselected spring constant coupled between the member and the support; and

an optical sensor for detecting the displacement of the member relative to the support, the detected displacement being representative of the applied force.

28. (Original) A sensor according to claim 27, wherein the optical sensor is fixed to one of the support and the member, and an optical grating is fixed to the other of the support and the member in a position to be analysed by the optical sensor to detect the displacement of the member relative to the support.

29. (Original) A computer program executable by a computer system and capable, when so executed, of causing the computer system to process the output signals of an array of sensors arranged to detect an impact applied thereto.

30. (Original) A computer program according to claim 29, wherein the computer program is capable of causing the computer system to produce a graphical representation of the output signals of the sensors.

31. (Original) A computer program according to claim 30, wherein the computer program is capable of causing the computer system to produce a graphical representation of any one or all of: the respective output signal of respective sensors over time; the combination of the output signals of all the sensors over time; and the output signals of the sensors in their relative positions.

Claims 32-54 (Cancelled).